

REMARKS

This is a full and complete response to the Office action dated June 20, 2007.

All comments and remarks of record are herein incorporated by reference. Applicants respectfully traverse these rejections and all comments made in the Office Action. Nevertheless, in an effort to expedite prosecution, Applicants provide the following remarks regarding the cited references.

DISPOSITION OF CLAIMS

Claims 30-32 and 38-42 are pending in the application. New claims 38-42 have been added. Claims 36-37 have been canceled. Support for amended claims 30-32 can be found in the Application on page 12, lines 4-7. New claim 38 is supported in the application on page 12, lines 11-13 and page 21, line 28, to page 22, line 15. No new matter has been added.

OBJECTIONS TO SPECIFICATION

The Examiner objected to the specification for misspelling “variants” and also improperly reciting SEQ. ID. NO. on page 11. Applicants have amended the application to correct the spelling of “variants” and employ “SEQ ID NO.” on page 11 and 12 of the application in accordance with Examiner’s suggestion.

OBJECTIONS TO CLAIMS

Claims 30-32 were objected to due to informalities for which the Examiner presented suggested claim language. Applicants adopted the form and language of for claim 30 as well as 31 and 32 however with amendments. Favorable action is solicited.

REJECTION UNDER 112, 1ST PARAGRAPH

Claims 30-32 and 36-37 are rejected under 35 USC §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors at the time the application was filed had possession of the claim invention. Applicants respectfully traverse this rejection.

According to *Capon*, the determination of what is needed to support generic claims to biological subject matter depends on a variety of factors, such as (1) the existing knowledge in the particular field, (2) the extent and content of the prior art, (3) the maturity of the science or technology, (4) the predictability of the aspect at issue, and (5) other considerations appropriate to the subject matter. *Capon v. Eshar*, 418 F.3d 1349, 1358, 76 USPQ.2d 1078 (Fed. Cir. Aug 12, 2005).

The Examiner contends that one of skill in the art would be unable to predict the structure of other members of a genus comprising “a transgenic cell or organism” because there is no showing of a transgenic organism that is an animal. However, the Examiner indicated that one species of the claimed genus has been fully described to produce transgenic organisms (plant and yeast) with increased triacylglycerol. *Office Action*, page 5, lines 3-5.

Applicants have amended claim 30-32 to recite “plant or yeast cell, fungi, or plant.” Furthermore, new claims 39-41 recite “plant or yeast cell, or plant.”

Thus, in view of Examiner’s indication that plant and yeast organisms have been fully described, and furthermore in view of the examples and technical detail disclosed in the application and in view of the state of art at the time of filing, Applicants respectfully assert that one of skill in the art would understand that Applicant had possession of the invention at the time of filing, thereby satisfying 35 USC §112, first paragraph. Applicants therefore respectfully request the above rejection be withdrawn.

REJECTION UNDER 112, 1ST PARAGRAPH

Claims 30-32 and 36-37 stand rejected under 35 USC §112, 1st paragraph for lack of enablement. Applicants respectfully traverse this rejection.

The Examiner contends that the application does not provide enablement for methods of making triacylglycerol comprising growing any transgenic cell or organism. However, the Examiner indicated that the application is enabling for methods of making triacylglycerol using yeast or plant organisms transformed with a gene encoding PDAT from *S. cerevisiae*. Applicants have amended claim 30-32 to recite “plant or yeast cell, fungi, or plant.” Furthermore, new claims 39-41 recite “plant or yeast cell, or plant.”

In view of the Examiners comment that the application is enabling for yeast or plant organisms, Applicants respectfully submit that the amended claims are in condition for allowance.

Furthermore, on page 7 of the Office Action, the Examiner argues that to make cells which produce TAG with uncommon fatty acids undue experimentation would be required. The Examiner further contends that to practice the claimed method, one would be required to use organisms which naturally produce uncommon fatty acids or to use organisms also transformed with a gene for the synthesis of uncommon fatty acids.

Enablement under 35 USC §112 requires that the specification describe the invention in such terms that one skilled in the art can make and use the claimed invention without undue experimentation. Applicants further note that the nature of the invention, and the state of the art and relative skill of those in the art is taken into account in determining whether experimentation is undue. In re Wands, 858, F.2d at 737, 8 USPQ2d at 1404 (Fed. Cir. 1988).

Applicants respectfully assert that undue experimentation is not required for employment of uncommon fatty acids. Applicants respectfully assert that what is meant by genus “uncommon fatty acids” would be well understood by those of skill in the art. As stated in the application, page 2, lines 8-9, it is indicated that there is “diverse array of unusually fatty acids in oils from wild plant species and these have been well characterized.” Furthermore, it is noted in the application on page 2, lines 13-18, it is indicated that there is improved genetic engineering technologies along with greater understanding of biosynthesis of unusual fatty acids. With such improved technologies,

the application indicates that fatty acids can produced in high purity and quantities at moderate costs. Application, page 2, lines 16-18. As illustrated in the application the state of the art and technology is such that uncommon fatty acids would be known and characterized for use by those of skill in the art. Therefore, practice of the claimed invention with uncommon fatty acids would not require undue experimentation.

The Examiner also argues that the specification does not describe increasing the overall oil content of the host organism. Furthermore, The Examiner also argues that the total amount of oils produced would not increase, relying on WO 96/38573. However, Applicants respectfully assert that the specification does indicate that the overall oil content may increase. As stated on page 1, lines 26-29, of the application, it is recited that “said type of genes [PDAT] expressed alone in transgenic organisms will enhance the total amount of oil (triacylglycerols) produced in the cells.” Furthermore, on page 9, lines 12-13 of the application it is stated that “preferably increased oil content of this cell or organism is also contemplated within the scope of the instant invention.”

Additionally, the Example shown on page 21, line 28 to page 22, line 15 demonstrates increased oil content of seeds. As stated on page 22, the certain T2 plants gave higher oil content than seeds from T2 plants generated from T1 plant transformed with an empty vector. *Application*, page 22, lines 12-15. With support from these portions of the application, Applicants have added new dependent claim 38.

Therefore, in view of the above, Applicants respectfully assert that the claimed invention can be practiced without undue experimentation and respectfully request that the above mentioned rejection be withdrawn.

REJECTION UNDER 112, 2ND PARAGRAPH

Claims 30-32 and 36-37 stand rejected under 35 USC §112, 2nd paragraph, as failing to set forth subject matter which the Applicants regard as their invention.

The Examiner contends that the recitation of “the nucleotide sequence encoding an enzyme is expressed” is indefinite. However, Applicants have adopted the Examiner’s suggested phrasing as indicated on page 3 of the Office Action and accordingly respectfully request the above mentioned rejection be withdrawn.

The Examiner also alleged that claim 31 is indefinite because of the recitation “producing triacylglycerol and or triacylglycerols” is not achieved by the claim. However, Applicants have amended claim 31 to recite “production of triacylglycerol and or triacylglycerols” as suggested by the Examiner on page 3 of the Office Action.

The Examiner also contends that claim 32 is indefinite alleging that the method is open ended. Applicants have amended claim 32 with “production of triacylglycerol and or triacylglycerols thereby increasing the oil content of an organism” and is therefore not open ended.

Additionally, the Examiner alleged claim 36 is indefinite. However, Applicants have canceled said claim thereby obviating the rejection.

In view of the foregoing, Applicants respectfully request the abovementioned 35 USC §112, 1st paragraph rejection be withdrawn.

In order to facilitate the resolution of any issues or questions presented by this paper, the Examiner is invited to directly contact the undersigned by phone to further the discussion.

The undersigned representative requests any extension of time that may be deemed necessary to further the prosecution of this application.

The undersigned representative authorizes the Commissioner to charge any additional fees under 37 C.F.R. 1.16 or 1.17 that may be required, or credit any overpayment, to Deposit Account No. 14-1437.

Conclusion

Having addressed all issues set out in the Office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,
NOVAK DRUCE & QUIGG, LLP

/Jason W. Bryan/
Jason W. Bryan
Reg. No. 51,505

Jason.Bryan@novakdruce.com
1000 Louisiana Ave
53rd floor
Houston, Texas 77002
T: 713-571-3400
F: 713-456-2836